

Removing Market Barriers to Green Development

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Impacts of the built environment

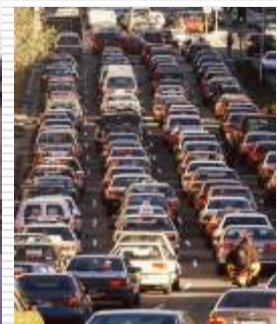
Buildings are responsible for:

- Nearly **40% of US energy use**; much higher if we account for transportation;
- About **40% of US carbon dioxide emissions**, the primary greenhouse gas (GHG), along with other GHG and air pollutant emissions;
- **Indoor environments where Americans spend nearly 90% of their time**, and which can present threats to human health and productivity;
- Construction and demolition debris constituting nearly **half of all non-industrial solid waste** in the U.S.;
- More than **12% of the total water consumed in the US per day**;
- A **major portion of urban runoff** that is among the leading sources of water quality impairment. [\[1\]](#)

[\[1\]](#) For more statistics and links to their primary sources, see: U.S. Environmental Protection Agency, *Buildings and the Environment: A Statistical Summary*, December 20, 2004, <http://www.epa.gov/greenbuilding/pubs/gbstats.pdf>

Why build green?

- Green building is an important tool than can help address all of these problems:
 - Climate change
 - Energy usage and management
 - Depletion of fresh water and other natural resources



Why build green?

...and **GAIN** environmental, social, and economic benefits!

- Reduce energy and electricity usage
- Improve transportation options (walking, biking, public transport)
- Reduce sprawl
- Better usage of limited natural resources
- Better indoor air quality
- Fewer sick days and lower absenteeism
- Higher rental rates and resale value
- Lower vacancy rates
- Green collar economy & jobs



How do we define “green building”?

■ Green building uses environmentally preferable practices:

- Materials
- Indoor Air
- Energy
- Water management
- Reuse and waste minimization
- Site and Location
- Construction
- Renovation & Retrofit
- Maintenance & Operation



Green development also includes:

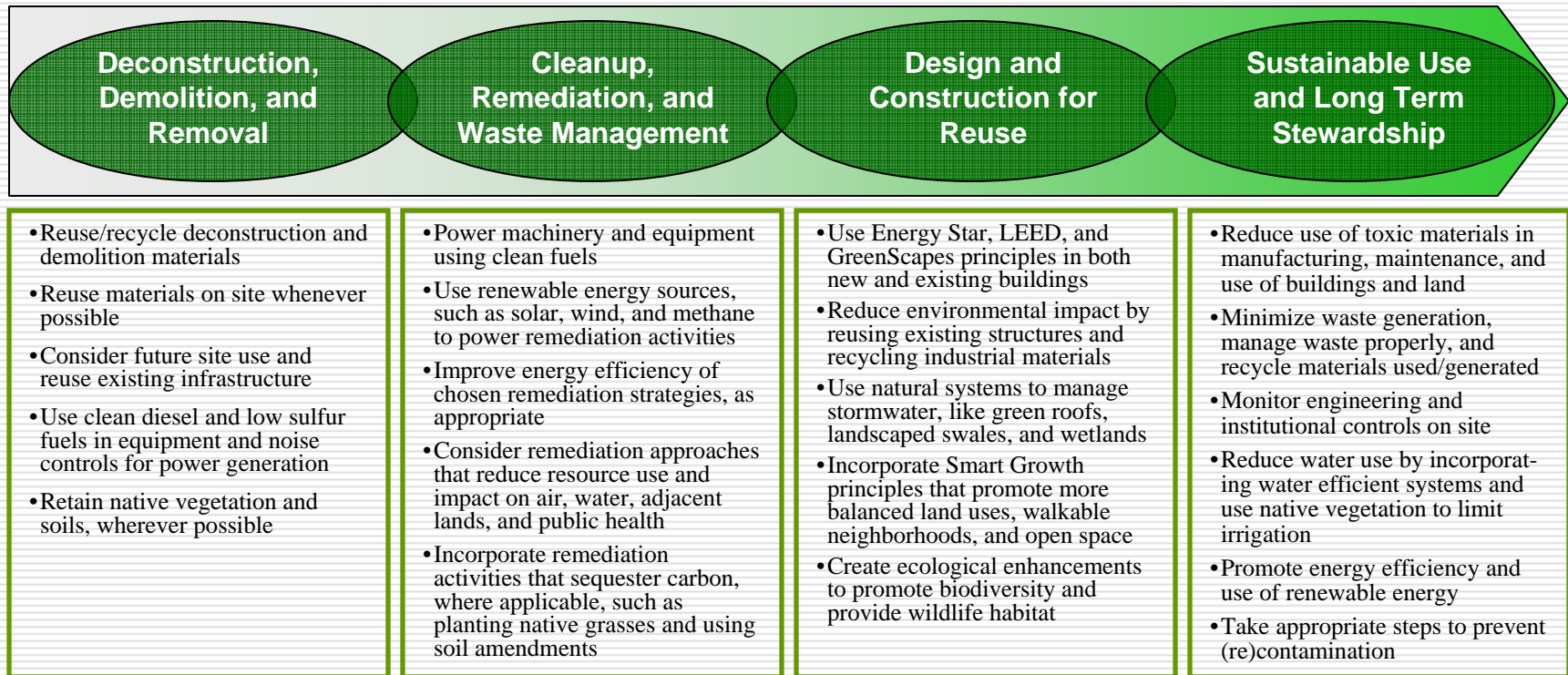
- The impact buildings have and the resources they use are not limited to the site only. Site techniques should be combined with community strategies:

- Smart Growth
- Low Impact Development
- Complete streets
- New Urbanism
- Green Infrastructure
- Infill Development
- Transit oriented development (TOD)



Green approaches in the land revitalization process

When planning for cleanup and reuse of a property, involve the public to ensure specific needs and all the impacts to the community are clearly understood and addressed. Opportunities to conserve resources, reduce impacts to the community, and reduce impacts on human health and the environment include, but are not limited to:



Current state of building

- U.S. green construction in 2006:
 - ~ 6% of commercial
 - < 5% of residential
- Adoption has mostly been on the local level
- Some progress, but still the exception vs. norm



So why isn't everyone on board?

*I can't find information
and resources to build
green*

**Commissioning
is too expensive
and the
paperwork too
complex**

Where can I
find a green
contractors?

*It costs too
much to
build
green!*

How do I know the
technologies really
work?

*Banks
won't
finance
these
buildings!*

Green building is for hippies,
greenies, fringe folks...not me.

A market approach...

- In late 2006/early 2007 U.S. EPA region 5 formed a steering committee to outline project and methodology
- Goal was to review and work with the market to achieve environmental benefits through green building

How do we do this?

- Help market to recognize the value of green development practices
 - Implement changes which will:
 - Remove barriers to green practices
 - Create tools, products, and incentives which will help green developments be more profitable
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Our methodology

Identifying

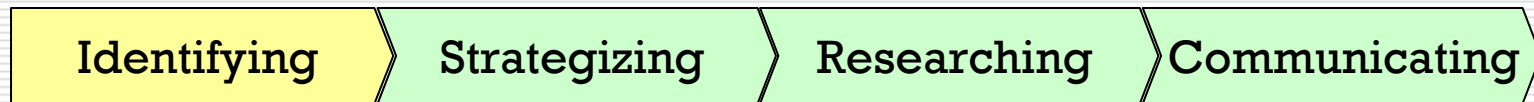
Strategizing

Researching

Communicating

- Identify the most significant market impediments to green development practices
 - Develop strategies to eliminate / minimize targeted market barriers
 - Research and implement strategies to remove market barriers
 - Communicate findings and successes through white papers, reports, additional research, and outreach
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Methodology: identifying barriers



- Held first workshop in May 2007
 - 50 participants all involved in the development field to identify market barriers
- Drafted document listing all market barriers identified by participants
- Categorized barriers to move project forward



Methodology: strategizing solutions



■ Categorized barrier types:

- Quantification knowledge gaps
- Communication shortfall
- Ownership structure & operating costs responsibility
- Risk, process & code issues
- Public finance
- Private finance

■ 2nd workshop in October 2007 (65 participants)

■ Workshop kicked off 6-month research and implementation period

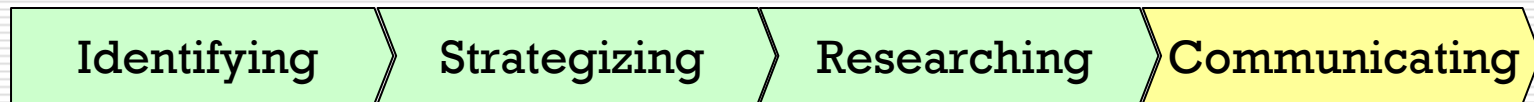


Methodology: research and implement



- Series of meetings with participants, outside experts, and stakeholders
 - Partnership with the Delta Institute (through the Northeast-Midwest Institute)
 - Graduate interns conducted research and drafted write-up
 - Project forum with library and to share ideas
 - Kicking off projects
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Methodology: communicate



- Wrapping up research phase
- Focus shifting to individual projects
- White paper will be published in the Northeast-Midwest Journal
- Results will be used for outreach and initiating new projects



What did we find?

- Not only a matter of supply and demand for green buildings
 - Current development process inadvertently makes green development more challenging at every step
 - Big gap in communication and education
 - Demand for quantitative information
 - Related processes, such as financing, budgeting, and reward system may not necessarily align with green building benefits
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Some barriers identified in first workshop

- **Lack of performance information** on green building features is a primary concern for many developers and their project financiers
 - **Conflicting results** or the **lack of one reliable authority** on performance often weaken the credibility of existing studies
 - **Information seldom conveyed to tenants or buyers** on the benefits of green development
 - **No incentives or tools provided** to those who are in the best position to communicate the value in green buildings (brokers, appraisers, property search specialists) to their clients
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Some barriers identified in first workshop

- **Structured ownership transactions and leasing agreements** may remove the incentives to invest in green infrastructure or conserve energy usage
 - **Strict guidelines** from equity and secondary markets often do not accommodate green developments
 - **Industry and government standards** used in project evaluation may need to be revisited as they can unintentionally impede green development
 - **Development process does not accommodate green features** (including design, contractor, financing, and approvals) in many markets
 - **Green development pioneers may have additional risks**
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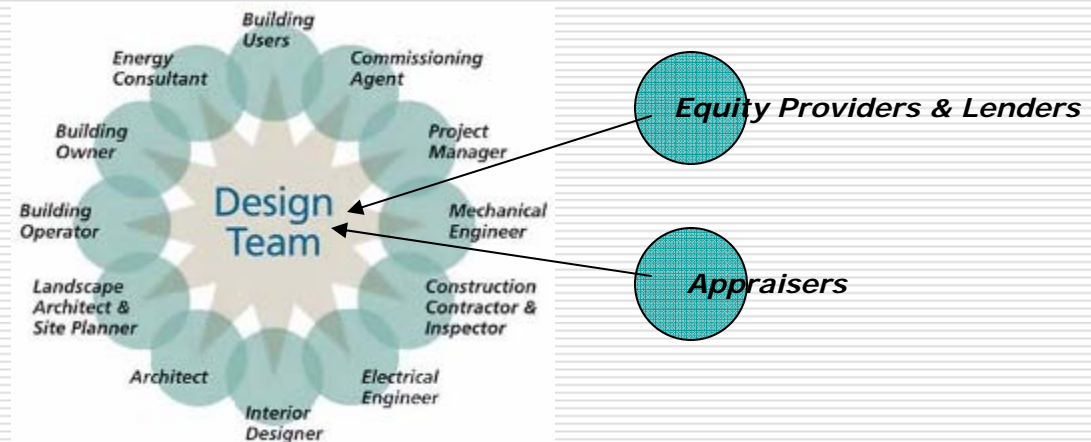
Despite these barriers...

- In some markets, new construction and retrofits of green buildings are being built; others starting to come on board
- Support from local community encourages green building practices & promotes overall sustainable development

Our job is to facilitate ways to speed this up...to bridge the gaps and change the processes to support this emerging business.

Ways to support green building...

- Integrated design: involving all parties up front
- Quantification needs
- Process changes and help
- Education to consumers, brokers, municipalities, investors, company budget personnel



Ways to support green building...

- Proper valuation of real estate
- Incentives and ordinances
- Financial products and tools



Projects underway

- Taking a small step approach...market can not change overnight, but playing field for green development needs to at least be level first

 - Appraisal Institute
 - Key to financing, valuation
 - Courses, certification system

 - Quantification study with USGBC Chicago
 - Study to provide in depth performance numbers for public and private buildings in metro Chicago
 - Possible expansion to provide cross-geographic information for Minnesota and Wisconsin
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Projects underway

■ BOMA

- Include green building information into current operating information survey

■ Milwaukee LISC

- Develop a green incentive that may be national model



Projects needed to support green

- Internal accounting / budgeting
- Communication strategy
- Financial tools, products to bridge integrated design
- Training for operation & maintenance
- Adoption of green codes
- Quantification studies
- Training for contractors
- Training for municipalities



Questions? Ideas? Comments?

